

Permit
Book

STATEOFMISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION



PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the facility described below, in accordance with the laws, rules, and conditions as set forth herein.

Permit Number: 0294-006

Facility I.D. Number: 0520-N012-005

Owner: United Dominion Industries

Owner's Address: 2300 One First Union Center, 301 S. College St.
Charlotte, NC 28202-6039

Facility Name: VARCO-PRUDEN BUILDINGS

Facility Address: 2250 Lower Lake Road, P. O. Box 4369, St. Joseph, MO
64504-0369

Legal Description: Buchanan County, NE $\frac{1}{4}$, NW $\frac{1}{4}$, S36, T57N, R36W

Application for Authority to Construct was made for:

**** Pre-engineered metal building manufacturing facility which includes cutting, mig welding and forming operations: a flow coat painter, frames dip tank, gauge dip tank and paint drying oven. This permit is reviewed in accordance with Section (3) of Missouri State Rule 10 CSR 10-6.060, "Permits Required." This is a synthetic minor facility. ****

☐ Special Conditions are not applicable to this permit.

☒ Special Conditions do apply to this permit and are listed as attachments starting on page 2.

Jan 19, 1994
EFFECTIVE DATE

John A. Young
DIRECTOR
DIVISION OF ENVIRONMENTAL QUALITY

PERMIT NUMBER

0294-006

FACILITY I.D. NUMBER

0520-N012-005

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

OPERATING CONDITIONS

1. This facility shall emit no more than 249.0 tons of VOC (volatile organic compound) per **12-month** rolling period from the use of coatings, solvents, and any other VOC-containing liquids used in or associated with this facility.
2. The tanks or containers for VOC-containing coatings, solvents, waste solvent and coatings, and any other VOC-containing liquids shall be tightly **closed at all** times, except when production, sampling, maintenance, or inspection procedures require operator access.
3. This facility shall implement a dust collector to control the particulate emissions emanating from the mig welding operation. This dust collector shall be in use at all times that mig welding is in progress, and shall be operated and maintained in accordance with the manufacturer's specifications. This dust collector shall be equipped with a gauge or meter which indicates the pressure drop across the dust collector. This gauge or meter shall be located such that it may be easily observed by Department of Natural Resources' employees. Replacement dust collector cartridges shall be kept on hand at all times.

PERMIT NUMBER

0294-006

FACILITY I.D. NUMBER

0520-N012-005

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

RECORDKEEPING CONDITION

4. This facility shall record the monthly and **12-month** rolling totals of VOC (in tons) emitted from this facility. This shall be done by mathematically manipulating manufacturers' formulation data for coatings, solvents and any other VOC-containing liquids used in the operations at this facility as well as monthly and **12-month** rolling total usage rate figures for these various **VOC-containing** liquids. The monthly and **12-month** rolling total VOC emission rates shall be recorded along with the calculations that determine these emission rates. All parameters used in determining the VOC emissions, such as gallons or pounds used, density, pounds of VOC per gallon, percent VOC by weight, etc. shall be distinctly noted in the same records. These records shall be kept on hand for at least two consecutive years, and updated **MSDSs** (Material Safety and Data Sheets) for all **VOC-**containing liquids shall be kept on hand at all times. Both shall be made available immediately to Department of Natural Resources' employees upon verbal request.

REPORTING CONDITION

5. This facility shall report to the Air Pollution Control Program no later than ten days after the end of a **12-month** rolling period when the record (as required by Condition Number 4) for that same period shows that this facility exceeded the limit of 249.0 tons of VOC per 12-month rolling period. Each exceedance shall be reported to: Missouri Department of Natural Resources, Air Pollution Control Program, Enforcement Section, P.O. Box'176, Jefferson City, MO 65102.

APPLICATION FOR AUTHORITY TO CONSTRUCT
A MINOR AIR CONTAMINANT SOURCE

Permit Number: 0294-006
Project/Facility Number: 0520-N012-005

Company To Receive Permit:

Reviewed: January 7, 1994

Varco-Pruden Buildings

2250 Lower Lake Road
St. Joseph, Missouri 64504

Mailing Address:

P.O. Box 4369
St. Joseph, MO 64504-0369

Buchanan County, NE 1/4, NW 1/4, Section 36, Township 57N, Range 36W

REVIEW SUMMARY

- * Varco-Pruden Buildings (Varco-Pruden) is applying for authority to construct a facility to manufacture pre-engineered metal buildings.
- * Varco-Pruden -constructed this facility without an air quality permit, thereby violating Missouri State Rule 10 CSR 10-6.060, "Permits **Required.**" The Department of Natural Resources' Kansas City Regional Office has been notified.
- * VOC (volatile organic compound) could potentially be emitted at a "**worst** case" rate of 263.73 tpy (tons per year). However, by means of a permit condition, VOC emissions, including the paint drying oven, are restricted to no more than 249.06 tpy. This level is less than the major level of 250 tpy.
- * This review is conducted in accordance with Missouri State Rule 10 CSR 10-6.060, "**Permits Required,**" Section (3), General Permit Reaquirements for Construction or Emissions Increase Greater than De **minimis** Levels.
- * This section requires ambient air quality modeling, but presently there are no reasonable means to assess the ambient ozone impact the VOC emissions will have.

- * SCREEN2, a conservative model, was run to determine the 24-hour average impacts of xylene and toluene. This model predicts worst-case impacts of $488 \mu\text{g}/\text{m}^3$ (24-hr. avg.) and $142 \mu\text{g}/\text{m}^3$ (24-hr. avg.), respectively, beyond the property line. These impacts are greater than the AALs (Acceptable Ambient Levels) of $11.8 \mu\text{g}/\text{m}^3$ (24-hr. avg.) and $10.2 \mu\text{g}/\text{m}^3$ (24-hr. avg.), respectively. At some future date, Varco-Pruden may have to implement a control technology for xylene and/or toluene emissions as required by Section 112 of the Clean Air Act Amendments.
- * It is recommended that this permit be issued subject to conditions.

GENERAL DESCRIPTION

The finished products are pre-engineered metal building systems. Manufacturing processes include cutting, welding, forming and painting.

The basis for this permit is paint and solvent usage rates that result in VOC emissions of no more than 249 tpy, less than the major level of 250 tpy. This reflects annual usage of approximately 41,145 gallons (187.21 tons) of light gauge coating, 10,608 gallons (38.51 tons) of toluene and 29,300 gallons (107.52 tons) of xylene. The light gauge coating is 55 percent volatiles by weight, containing xylene (30 percent), toluene (5 percent) and VM&P Naptha (20 percent).

The facility contains a 2.5 MMBtu paint drying oven.

EMISSIONS SUMMARY

VOC emissions are based on the assumption that all volatiles evaporate into the ambient air. Products of combustion result from natural gas combustion in the paint drying oven. Emission factors are taken from EPA (U.S. Environmental Protection Agency) document AP-42, Compilation of Air Pollutant Emission Factors, Section 1.4, Natural Gas Combustion, Oct., 1986. Particulate emanating from the mig welders are ducted to a dust collector and, as such, are deemed negligible. Implementation of this dust collector is required as a condition of this permit.

Unconditioned potential emissions are based on 8,760 hours of operation per year. Conditioned potential emissions are 249.06 tpy (includes potential VOC from the paint drying oven) to remain below the 250 tpy major level. Potential emissions are as noted in the following tables:

POTENTIAL VOC EMISSIONS					
SOURCES	VOLATILE ORGANIC LIQUIDS	UNCONDITIONED POTENTIAL		CONDITIONED POTENTIAL	
		WEIGHT USED (tpy)	VOC (tpy)	WEIGHT USED (tpy)	VOC (tpy)
EP #1: FLOW COAT PAINTER	LIGHT GAUGE COATER	84.18	46.30	79.48	43.71
	TOLUENE	40.79	40.79	38.51	38.51
EP #2: FRAMES DIP TANK	LIGHT GAUGE COATER	82.30	45.27	77.71	42.74
	XYLENE	57.33	57.33	54.13	54.13
EP #3: GAUGE DIP TANK	LIGHT GAUGE COATER	31.80	17.49	30.03	16.52
	XYLENE	56.55	56.55	53.39	53.39
PAINT DRYING OVEN			0.06		0.06
TOTAL			263.79		249.06

POTENTIAL PAINT DRYING OVEN EMISSIONS (TPY)				
PM ₁₀	SO ₂	NO _x	VOC	CO
0.05	0.01	1.04	0.06	0.21

POTENTIAL HAZARDOUS AIR POLLUTANTS	
XYLENE	TOLUENE
163.68 TPY (4.99 GRAMS/SEC)	47.87 TPY (1.46 GRAMS/SEC)

PERMIT RULE APPLICABILITY

Since the potential emissions of VOC from the paint booths and associated operations as limited by this permit are 249.06 tons per year, this permit application is reviewed under Missouri State Rule 10 CSR 10-6.060, "Permits Required," Section (3), ~~General Requirements for Construction or Emissions~~ Increase Greater than De minimis Levels. This section requires ambient air quality modeling, but presently there are no reasonable means to assess the impact the VOC emissions from a single facility would have upon the ambient concentration of ozone.

APPLICABLE RULES

Missouri State Rule 10 CSR 10-2.060, "Restriction of Emission of Visible Air Contaminants," will apply to this source. This rule specifies the maximum allowable shade or opacity of visible air contaminant emissions. The allowable for this source is 20 percent.

Missouri State Rule 10 CSR 10-2.070, "Restriction of Emission of Odors," will apply to this source. This rule restricts the emission of excessive odorous matter.

Missouri State Rule 10 CSR 10-6.110, "Submission of Emission Data and Process Information."* This rule requires periodic submittal of emission data and process information on state-supplied Emission Inventory Questionnaire forms.

None of the PSD (Prevention of Significant Deterioration) requirements will be triggered by this source. There are no NSPS (New Source Performance Standards) that apply to this facility, nor do any of the NESHAPS (National Emission Standards for Hazardous Air Pollutants) apply to this facility.

AMBIENT AIR QUALITY IMPACT ANALYSIS

As stated before, no reasonable means exist to determine additional impact of VOC emissions from this facility upon the ambient concentration of ozone. However, for future reference, the SCREEN2 model was run to determine highly conservative 24-hour average xylene and toluene impacts at the nearest property line for comparison to the AALs of 11.8 and 10.2 $\mu\text{g}/\text{m}^3$ (24-hr. avg.)

Potential xylene and toluene emission rates of 4.99 and 1.46 **grams/sec**, respectively, were introduced to the conservative model. These emissions are assumed to emanate from the paint drying oven vent. The approximate distance from the vent to the nearest property line is 37 meters. The vent is 0.3 meter in diameter with a height of approx. 9.1 meters. The resulting conservative impacts are 488 and 142 $\mu\text{g}/\text{m}^3$ (24-hr. avg.) for xylene and toluene, respectively.

STAFF RECOMMENDATION

On the basis of this review in accordance with Section (3) of Missouri State Rule 10 CSR 10-6.060, **"Permits Required,"** I recommend that this permit be granted with conditions.

Paul Brooks

Paul Brooks
Environmental Engineer

1-10-94

Date